

## **Identification and characterisation of a locally isolated lipolytic microfungus - *Geotrichum candidum***

### **ABSTRACT**

A strain of *Geotrichum candidum* was successfully isolated from local soil samples and some of its characteristics determined. The strain produces lipase that hydrolysed palm olein on a selective agar incorporated with Nile Blue sulphate and palm olein. Suspension culture was used to study the growth and lipolytic activity. The results showed that the highest dry cell mass of *G. candidum* was achieved after 96 hours of growth when 2% (v/v) seed culture was used as inoculum. Using spore suspension as an inoculum was not favourable since less yield of mycelia mass was obtained at peak of log phase and the culture exhibited relatively low lipolytic activity and efficiency of hydrolysis. The maximum amount of free fatty acids (90.5%) was released after 48 hours of incubation. However, the highest lipolytic activity, 7.02 mmole FFA/g dry cell was detected at 54 hours. The production of cell-bound lipase of *G. candidum* was concomitant with growth and declined when growth ceased. During the course of growth, changes to palm olein added into the culture medium caused the growth culture to turn in to a creamy colloidal emulsion. Towards the end of the incubation period, solid fatty particles were formed. Thin layer chromatographic analysis showed that triacylglycerols in the palm olein were rapidly hydrolysed to fatty acids in 18 hours, with no pronounced change in the amounts of 1,2-diacylglycerols and 1,3-diacylglycerols.

**Keyword:** *G. candidum*; Morphology; Growth; Lipolytic activity